EXAMPLE OF DOE FIELD WORK PROPOSAL

LOS ALAMOS
NATIONAL LABORATORY

PROPOSAL APPROVAL

Internal Use Only

LANL Proposal Number	LANL Program Code
ER093007	New

Send a copy of the completed proposal package to CRM (Mail Room) MS A150

Proposal Title			
ELECTRONIC PREPRINT SERVICE TO NUCLEAR THEORY AND EXPERIMENT			
Sponsoring Agency			
DOE/HENP ER-23			
Agency Contact			**Telephone**
HENDRIE, D. L.			(301) 903-3613
Agency Mailing Address (St., City, State, Zip)			
DOE, Director of Nuclear Physics, DOE/HENP ER-23, GTN Washington, D.C. 20585			
Proposal Originator	**Organization**	**MS**	**Telephone**
GOLDMAN, J. T.	T-5	B283	505-667-3244

Approvals

Approved By	Organization	MS	Telephone	A - Approved R- Revise	Date	Initial
Group Leader (1) J. T. Goldman	T-5	B283	7-3244	☒A ☐R	1/22/93	
Group Leader (2)				☐A ☐R		
Group Leader (3)				☐A ☐R		
Financial Operations* Jean Elson	FIN-17	B244	7-9531	☒A ☐R	1/20/93	
Division Leader (1) Richard C. Slansky	T-DO	B210	7-4401	☐A ☐R	1-1-93	
Division Leader (2)				☐A ☐R		
Program Manager				☐A ☐R		
Line Associate Director Fred C. Norse	ADPLS	A114	7-1600	☒A ☐R	1/21/93	
Other (1)				☐A ☐R		
Other (2)				☐A ☐R		
Other (3)				☐A ☐R		
Program Director Peter D. Barnes	PD-NPP	H850	7-2000	☐A ☐R	1/27/93	
Program Associate Director				☐A ☐R		
ADDRA (If DoD)				☐A ☐R		
Controller Terry R. Gibbs	CONT	D411 ~~A119~~	7-3048	☒A ☐R		

1•Any revision to costs or IVES requires subsequent approval by FIN.

special access *programs require* the *approval* **of *the Labora*** *O/y* ***Director***
(See **May** *29, 1990, hector's Memo)*

Form 1221-12 9

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE: January 28, 1993
IN REPLY REFER TO: T-5/92:275 CONT-93-P072
MAIL STOP: B283
TELEPHONE: (505)667-3244
(FAX) 505-667-1931
E–mail address
goldman@hotelcal.lanl.gov

Dr. David L. Hendrie
Director of Nuclear Physics
DOE/HENP ER-23 GTN
Washington, D. C. 20585

Dear Dr. Hendrie,

SUBJECT: 'ELECTRONIC PREPRINT SERVICE TO NUCLEAR THEORY AND EXPERIMENT" - ERW93007

Enclosed is an information copy of the above—named proposal. If you have any questions on the technical aspect of the program. please call principal Investigators Terry Goldman (FTS 843-3244) or Ben Gibson (FTS 843-5059) or Program Manager Peter Barnes (FTS 843—2000).

Sincerely,

Willard Lewis for

Terry R. Gibbs
Deputy controller

TRG/JTG:rt

Enc. a/s

Cy: Joe McGrory, DOE/HENP ER-23
Jean En, FIN-I?, MS B244
Fred Morse, ADPLS, MS A114
Dick Slansky, T-DO, MS B210
Ben Gibson, T-S, MS B283
Terry Goldman, T-5, MS B283
T-5 Files

Los Alamos
Las Names National Laboratory
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Mr. Louis Martinez, BRMD
Department of Energy
Albuquerque Operations Office
P. o. Box 5400
Albuquerque, NM 87115

Dear Mr. Martinez,

SUBJECT: 'ELECTRONIC PREPRINT SERVICE TO NUCLEAR THEORY AND EXPERIMENT" - ERW93007

Enclosed *for* your review and approval is a proposal of the above-mentioned subject. If the proposal is approved, please forward the signed original to:

Mr. David L. Hendrie, Director
DOE/HENP ER-23, GTN
Washington, D. C. 20585

An information copy of this proposal is being sent to Mr. Hendrie.

If you have any questions, please cdl Ben Gibson, FTS 843-5059, Terry Goldman, FTS 843-3244, or Peter Barnes at FTS 843—2000.

Sincerely,

Terry R. Gibbs
Deputy Controller

TRG/JTG:rt

Enc. a/s

Cy: Joe McGrory, DOE/HENP ER-23
Jean Elson, FIN-17, MS B244
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Ben Gibson, T-5, MS B283
Terry Goldman, T-5, MS B283
T-5 Files

ALAMOS NATIONAL LABORATORY
Alamios, New Mexico 87545

FIELD WORK **PROPOSAL**
FOR DOE PROGRAMS

Work Proposal —r	1 •a Program code	Z. Revision Number	3. Date Prepared
ERW93 007	NEW	01	06/03/93

ork Proposal Title	5. Budget and Reporting Number
ECTRONIC PREPRINT SERVICE	KB-03-01-00-0

Work Proposal Term(include Months/Days/Years)	7. Is this prop-al included in the l—tit. Plan?
Begin: 02/01/93 End: / /	(X) Yes ( ) No

DOE Program Manager	FTS Number
NDRIE, D. L.	

Operations Office Work Proposal Reviewer	FTS Number

Contractor Program Manager	FTS Number
RNES, P. D.	

• Contractor Principal Investigator	FTS Number
LDMAN , J .T .	

Headquarters Organization	12. Operations Office	13. Contractor Name
CLEAR PHYSICS	Albuquerque	Los Alamos National Laboratory

DOE Organization Code	15. Operations Off. Code	16. Code
	AL	03

Work Proposal Description (Approach, anticipated benefit in 200 words or less)

T-5 proposes to establish and maintain an electronic preprint service for nuclear physics. This service will include both theoretical and experimental nuclear physics topics, and will be tied closely to the existing high-energy preprint services. The system we envision would be two-tiered, including both an interactive retrieval system and the current nail-based system. The interactive system will be made available to any researcher directly on the internet and will allow easy interactive access to content searches, abstracts, and papers.

Contractor Work proposal Manager	Date	19. Operations Office Review Official	Date

Detail **Attachments**

( ) a. Facility **Requirements**
( ) b. **Publications**
( ) c- **Purpose**
( ) d. **Background**
( ) e. Approach
( ) f. Technical program
( ) g. **Future Accomplishments**
( ) h- **Related** to Other **Projects**
( ) i. **Environmental Assessment**
( ) j. **Explanation** of nil—tams
( ) k. **Other (Specify)**

ontractor Name / os Alamo= National Lab	Work Proposal NO. ERW93007	Program Code NEW	Rev No. 01	Date Prepared 06/03/3

1. Staffing (In Staff Years)	PRIOR YEARS (Optional)	FY 1993 BY-2	(BY-1 FY 1994) 1 Pres.	Revised	(BY) FY 1995 Guid.	Request
l. Scientific	0.00	0.25	0.25	0.25	0.251	0.251
). Other Direct	0.00	0.00	0.00	0.00	0.00	0.00
:. Total Direct	0.00	0.25	0.25	0.25	0.25	0.25
!. Operating Exp. (In thousands)						
1. Total Obl (BA)		58	63	63	65	65
). Total Costs (BO) 1	0	581	61	61	651	65
). Equipment (In thousands) 1						
1. Total Obl (BA)		01	01	0	01	01
). Total Costs (BO)	0	0	0	0	0	0

1. Five Year Plan (In thousands) constant by $	FY 1996 BY + 1	FY 1997 BY + 2	FY 1998 BY + 3	FY 1999 BY + 4	TOTAL TO 1 COMPLETE
1. Total Operating Obligations	651	651	651	651	0
). Total Operating costs	651	651	651	651	(
Total Equipment Obligations	0	0	0	0	0
1. Total Equipment Costs	0	0	0	0	0

5. Milestone Schedules (Tasks) (optional)	Proposed Schedule	Authorized Schedule

5. Reporting Requirements (Description)

An annual progress report as part of the Field Work Proposal.

'S ALAMOS NATIONAL LABORATORY 06/03/93
dget Cost Estimate Worksheet

alyst: elr
in Invst: GOLDMAN, J. T.
og Mgr: BARNES, P. D.
oposal/Rev: ERW93007/01 Date Prepared: 06/03/93 Offsite Burden? N
og Code or Task: NEW SM Sal *Factor* $K: 97.30 Program Rate: 0.3%
ganizational Code: 9505 Oth Sal Factor $X: 0.00 Division Rate: 10.1%
R Code: KB-03-01-00-0 M&S Guideline: 14.0% Group Rate: 0.0%
rr Target $K: 58 PB Target $K: 61 Guid Target $X: 64

llars pressed $x	Prior Year FY92	BY-2 FY93	BY-I Pres FY94	BY-I Revised FY94	Budget Year Guid FY95	Budget Year Revised FY95	BY+I FY96	BY+2 FY97
FTEs:	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25
h FTEs:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l&Fr $K:	0	24	24	24	24	24	24	24
l OCF:			4.8%	4.8%	4.8%	4.8%	<na>	<na>
c S&F $K:	0	24	25	25	26	26	26	26
rd Rate:		81-0%	77.5%	77.5%	77.5%	77.5%	77.5%	77.5%
rden $K:	0	19	19	19	20	20	20	20
rd S&F $x:	0	43	44	44	46	46	46	46
rd S&F %:		74.1%	72.1%	72.1%	70.8%	70.8%	70.8%	70.8%
jProc $X:	0	0	0	0	0	0	0	0
h M&S $K:	0	9	11	11	11	11	11	11
S OCF:			3.9%	3.9%	3.2%	3.2%	<na>	<na>
c M&S $K:	0	9	11	11	12	12	12	12
S%:		15.5%	18.0%	18.0%	18.5%	18.5%	18.5%	18.5%
ogSupp $K:	0	0	0	0	0	0	0	0
v Supp $K:	0	6	6	6	7	7	7	7
p Supp $x:	0	0	0	0	0	0	0	0
tal BO $x:	0	58	61	61	65	65	65	65
Y $K:		0	0	0	2	2	2	2
tal BA $K:		58	63	63	65	65	65	65
E BO $K:	0	0	0	0	0	0	0	0
E BA $K:	0	0	0	0	0	0	0	0
E BOY $K:		0	0	0	0	0	0	0
onstr BO $X:	0	0	0	0	0	0	0	0
onstr BA $X:	0	0	0	0	0	0	"o	0
onstr BOY$K:		0	0	0	0	0	0	0

Los Alamos
NATIONAL LABORATORY

ENVIRONMENTAL, SAFETY. AND HEALTH (ES&H) DOCUMENTATION FOR PROPOSALS

All LANL projects must satisfy ES&H regulatory requirements, including the development of necessary ES&H analyses and documentation, and obtaining necessary ES&H regulatory permits. It is necessary that LANL review research activities to assure that all casts (start-up, operating and shutdown) are addressed before starting any project. Below are some guidelines that will help the Principal Investigator decide if there is • need to further evaluate the Proposal for ES&H concerns. If any question below is answered with a yes, the Principal Investigator should evaluate the potential for possible delays in start dam and possible increases in costs- There may be a. requirement for additional ES&H analyses or special permits.

	LANL Program Code New
Prop-l Number ERW93007	Plop—l— THEORETICAL SUPPORT FOR EXPERIMENT
-t—in–g ency DOE/HENP ER-2:3	
Program Manager/Organization BARNES, P. D.	1 Project Leader/Organization SLANSKY, R- C.
Please duck one of the following: [x] New Project [ ] Continuing Project	

Yes	No	
—	X	Will this project involve any construction, renovation, remodeling, or decommissioning activities?
—	X	Will this project generate new or altered •irbcme emissions or liquid daunt?
—	X	Will this project involve any new or altered high energy sources (e.g. radiation, electromagnetic radiation, lasers, propellants, explosives)?
—	X	Will this project involve any new or altered toxic, carcinogen corrosive biological (including blood or organs), radioactive, or infectious etc., chemicals or agents?
—	X	Will this project generate any waste materials that are classified as radioactive waste mixed waste, or hazardous waste per 40 CFR, or the Los Alamos National Laboratory "Environment, Safety, and Health Manual: Administrative Requirements?

If the answer is 'yes- to any of the above questions, see ES&H ARI-10 for direction.

20b. Publications

R. SILBAR, "h Interactive NeXTstep Interface to a Fortran Code for Solving Coupled Differential Equations'', Computers in Physics.

R. R. Silbar, "An Interactive Interface to the Beam Optics Code TRANSPORT." presented at Workshop on Linear Accelerator and Beam Optics Codes, LaJolla, January 1988, AIP Conf. Prof. 177, 109 (1988).

R. R. Silbar and D. E. Schultz, "Automation *of* Particle Accelerator control," ASME Int. Conf. on Computers in Engineering, San Francisco, August 1988, published in Computers in Engineering 1988 - Volume One, d. by V. A. Tipnis and E. M. Patton, (American Soc. of Mech. Engineers, New York, 1988), pp. 79–83.

R. R. silk, "Introduction to Expert Systems," presentation to "Short Course on Real-Time Expert Systems," Sixth Conf. *on* Real-Time Computer Applications, Williamsburg, VA, May 1989.

R. R. Silbar, P. D. Knudsen, C. A. Hodge, and J. W. Jackson, "object-oriented Inventories for Simulation of Manufacturing Processes," presented at Conference on AI in the DOE Complex, Los Alamo. NM, October 1989, and Conference on AI Systems in Government, Washington DC, May 1990.

R. R. Silbar, "The <c-S,Q,@> Wars," NeXT Users' Journal l, No. 6, p. 30, May 1990.

R. R. Silbar and H. W. Egdorf, "object-oriented Inventories: Comparison of Implementations in KEE and CLOS," *Soc. of Computer* simulation Meeting, Anaheim, CA, January 1991, LA-UR-90-3692.

H. T. Williams and R. R. silk, "Automated Angular Momentum Recoupling Algebra," *J. Comp. Phys. 99, 299,* 1992.

J. Carlson, 'variational Monte Carlo calculations of ^{3}H and ^{4}He with a Relativistic Hamiltonian', submitted to physical Review C.

J. Carlson and R. Schiavilla, 'Euclidean Proton Response in Light Nuclei', physical Review Letters 68, 3682 (1992).

J. carbon and K. E. Schmidt, 'Monte Carlo Approaches to Effective Field Theories', Recent Progress in Many-Body Theories VII, Minneapolis, MN, Aug. 1991, LA-L7R-91-3023.

J. Carlson and R. B. wiring., 'Variational Monte Carlo Techniques in Nuclear physics', *computational* Nuclear *Physics Vol l,* K. Langanke, J. A. Maruhn, and S. E. Koonin, eds. , Springer-Verlag, Berlin, 1991.

20c. Purpose

T-5 proposes to establish and maintain an electronic preprint service for nuclear physics. This service will include both theoretical and experimental nuclear physics topics, and will be tied closely to the existing high-energy preprint services.

20d. Background

See 20f. Technical Progress below.

20e. Approach

The system we envision would be two-tiered, including both an interactive re–tried system and the current mail–based system. The interactive system will be made available to any researcher directly on the internet, and will allow easy interactive access to content searches, abstracts, and papers.

20f. Technical Progress

We have already established, as of October l, 1992, a nuclear theory preprint board, NUCL-TH @xxx.lanl.gov in parallel to the hep-ph, hep-th, and gr-qc boards. Preprints are submitted to these boards through electronic mail, and all submitted papers are posted as long as they reasonably pertain to the subject matter. At the time this proposal was written, there were already almost 300 subscribers, (split about 60-40 between US and foreign addresses) despite the fact that the DNP Newsletter had not yet announced the existence of our service.

The mail-based system was written by Paul Ginsparg of the Los Alamos Theory Division, and allows one to perform content searches and retrieve papers, abstracts, and listings through e—mail. The high-energy community has been successfully using this system for about one year. Although the system works well, refinements are still being pursued. For example, a scheme for automatic inclusion *of* figures is being developed, and the help files could be improved.

20g. Anticipated Future Progress

Proposal

We will develop an interactive retrieval system that works with this electronic preprint system. This software is based on an emerging standard for document retrieval developed at the University of Minnesota (called Gopher). The interactive system consists of two pieces, a server and a client. The server maintains copies of all recent manuscripts, and a listing of all manuscripts When a client requests a manuscript, the server gets a copy of the manuscript through anonymous ftp if it does not already exist, and then sends it directly to client. All of this is transparent to the end-user, of course, except for possible network delays.

The host software will be run locally.. a workstation devoted to this purpose, and will allow anyone on the internet access to the system. The various client software packages will be developed and tested here and then distributed to any interested researcher in nuclear physics.

Implementation

The rather complicated structure of this software is useful in a variety *of* ways. First, since Gopher is an emerging standard, Client programs already exist for a wide variety of interfaces, including ASCII terminals, X-windows, PC'S, Macs, and NeXT computers. Each of these can be adapted to the e-print system fairly readily. We currently have a very preliminary version of the interactive system running on the Sun workstations within T-5.

It is also important to be able to Separate the e–mail—based system from the interactive system. One vital issue is security, the user never directly communicates with the machine that retains permanent copies of all the papers.

Another important issue is access, if this system is successful it may eventually generate many hundreds of requests per day. Although we feel that initially one interactive server should be able to handle the entire load, eventually this load may need to be split among different machines. The system is being designed with this in mind.

Finally, the interactive system we are developing is expandable. Many additional items could eventually be included, not necessarily directly related to preprints. For example, it would be fairly easy to include a directory of researchers in nuclear physics, including phone numbers, e—mail addresses, etc. Many other uses can easily be envisioned.

Resource Requirements

This proposal contains two components, hardware and software- The hardware we propose to purchase is listed at the end of this proposal. We believe that one high-capacity workstation should be a sufficient interactive server for 2-3 years. To be useful, this workstation must be able to handle *many* simultaneous requests. In addition, it must have a large disk capacity Although current storage requirements are fairly modest, this will undoubtedly change as the system evolves to allow figures to be included more easily. A high-capacity backup system, based on either 4mm (DAT) or 8mm (Exabyte) tapes is an obvious necessity.

The software component is also crucial. Most of the work required is devoted to building interface between the e-print system and the Gopher protocol. Both of these systems are changing (and improving) rapidly. In order to be effective, the interactive system must keep up with these improvements. This software must also be available to a wide variety of researchers. We propose to develop and maintain the interactive Client program for a wide variety of machines (including at least ASCII, X-window. and NeXT interfaces), and to distribute them freely throughout the nuclear (and perhaps high-energy) physics communities. We estimate that this effort will require approximately 1/4 of an FTE.

Capital Budget

Specific models and options will be **re-examined at the time of purchase.**

Prices reflect all applicable discounts.

Sun SPARCSTATION 10 model **41 (S10-FGX-41-32-P43)** $18000.00
19" color monitor
32 MB ram, 424 MB internal disk

32 Mbyte ram expansion **(2x16)** (X- **116F)** $2000.00

Seagate Elite 2.5 **GB** external disk **(ST42400N)** $4000.00
(fast wide **SCSI-2 drive)**

Enclosure/cables for above $ 500.00

HP 8 **GB 4mm (DAT)** tape **drive** $2000.00

Total $26500.00

Maintenance costs for this system will run **approximately $3k** per Year.

Personnel

The fully accounted cost of 0.25 **FTE** in T-5 is **$58k** per year.

20k. Staff

T-S Staff Members

J. A. Carlson
J. L. Friar
B. F. Gibson
J. N. Ginocchio
T. Goldman (Group Leader)
P. Herczeg
R. R. Silbar

postdoctoral Appointments

C. Benesh (12/91 - 12/93)
R. Timmermans (09/92 - 09/94)
C. Johnson (11/92 - 11/94)

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